

US Tsunami Warning Centers Response Chronology
May 3, 2006
Tonga Earthquake and Tsunami

A major earthquake occurred in the Tonga Islands (450 miles southwest of American Samoa) at 11:27 AM EDT (1527 UTC) on May 3rd, 2006. The quake was felt by the staff at the National Weather Service Office in Pago Pago and as far away as New Zealand, according to media reports. Initial magnitude was reported as 8.1, later revised to 7.8 moment, 7.7 Richter scale.

A non-destructive tsunami was detected by tide gauges in Fiji, Niue, Tonga, American Samoa, and Hawaii (including Midway). The maximum detected peak-to-peak height was 0.54 meters (21.26 inches) in American Samoa. There was no reported damage from the tsunami.

The Pacific Tsunami Warning Center (PTWC) issued Bulletin #1 for the Pacific within 15 minutes at 11:42 am EDT declaring a Tsunami Warning for New Zealand and Fiji. At 11:43 am EDT, PTWC issued Bulletin #1 for Hawaii declaring a Tsunami Watch for the State of Hawaii.

Bulletin #2 for the Pacific issued at 12:31 pm EDT included Tonga, Niue, American Samoa, Samoa, Wallis-Futuna in the Tsunami. Bulletin #2 for Hawaii issued at 12:34 pm EDT changed the watch to an advisory and estimated "a small sea level rise" in Hawaii.

Bulletins #3 canceling the warning for the Pacific and the advisory for Hawaii were issued at 1:36 pm EDT and 1:39 pm EDT, respectively.

The West Coast/Alaska Tsunami Warning Center issued Tsunami Advisory Bulletins about the event at 11:43 am EDT, 12:48 pm EDT and 1:49 pm EDT. No watches or warnings were issued for their area of responsibility which included Alaska, Washington, Oregon, California and the west coast of Canada.

UTC	EDT	Elapsed Time	Product/Event
15:27	11:27 am	0:00	Earthquake occurs
15:29	11:29 am	0:02	Samoa short period alarm alerted West Coast/Alaska Tsunami Warning Center (WC/ATWC) duty personnel
15:34	11:34 am	0:07	South Pacific regional alarm and autolocation of event in Tonga with initial magnitude 7.2 at the WC/ATWC in Alaska.
15:35	11:35 am	0:08	South Pacific regional alarm (stations CTAO and SNZO) and autolocation of event in Tonga with initial magnitude 8.2 at the Pacific Tsunami Warning Center (PTWC) in Hawaii

15:37	11:37 am	0:10	WC/ATWC issues P-time message with location 19.9S, 174.3W, Moment magnitude 8.2
15:40	11:40 am	0:13	PTWC scientists refined the earthquake location (19.9S, 174.2W), depth (22km), and Moment magnitude 8.1
15:42	11:42 am	0:15	PTWC Bulletin #1a (WEPA40) Issues Tsunami Warning for Fiji/New Zealand, Tsunami Advisory for rest of Pacific
15:43	11:43 am	0:16	PTWC Bulletin #1b (WEHW40) Issues Tsunami Watch for State of Hawaii
15:43	11:43 am	0:16	WC/ATWC Bulletin #1 (WEPA41) Bulleting stating no watch or warning for Alaska/British Columbia or US West Coast
15:48	11:48 am	0:21	Pacific Command (PACOM) called PTWC to inform non-receipt of tsunami bulletin
16:01	12:01 pm	0:34	The sea level gauge closest to the earthquake epicenter (Niue Island) reported a zero-to-peak 0.15 m tsunami signal. This PTWC sea level station reports on the older 1 hour interval.
16:18	12:18 pm	0:51	The US State Department calls WC/ATWC to obtain the earthquake information and tsunami Estimated Times of Arrival (ETAs) for the US West Coast.
16:20	12:20 pm	0:53	Hawaii State Civil Defense (HSCD)/PTWC make decision to continue tsunami watch for Hawaii
16:25	12:25 pm	0:58	Hawaii Island Mayor receives update on event status
16:31	12:31 pm	1:04	PTWC Bulletin #2a (WEPA40) Tsunami Warning issued for Tonga, Niue, American Samoa, Samoa, Wallis-Futuna, and Fiji. Remainder of Pacific remains under tsunami advisory. Earthquake magnitude downgraded to Moment 7.8
16:34	12:34 pm	1:07	PTWC Bulletin #2b (WEHW40) Tsunami Watch for Hawaii downgraded to advisory
16:45	12:45 pm	1:18	The sea level gauge at Pago Pago, American Samoa reported a zero-to-peak 0.31m tsunami signal. This PTWC sea level station reports on the newer 6 minute interval.

16:48	12:48 pm	1:21	WC/ATWC Bulletin #2 (WEPA41) Repeating no watch or warning in effect for Alaska, British Columbia or US West Coast
17:01	1:01 pm	1:34	The sea level gauge at Niue Island reported a zero-to-peak 0.21 m tsunami signal. The PTWC sea level station reports on the older 1 hour interval.
17:02	1:02 pm	1:35	The sea level gauge at Apia, Samoa reported a zero-to-peak 0.04m tsunami signal.
17:18	1:18 pm	1:51	The sea level gauge at Nukualofa, Tonga reported a zero-to-peak 0.23m tsunami signal.
17:26	1:26 pm	1:59	The sea level gauge at Suva, Fiji reported a zero-to-peak 0.06m tsunami signal.
17:27	1:27 pm	2:00	PTWC determined a refined earthquake magnitude Moment magnitude 7.9
17:36	1:36 pm	2:09	PTWC Bulletin #3a (WEPA40) Tsunami Warnings cancelled for all areas of the Pacific in area of responsibility.
17:39	1:39 pm	2:12	PTWC Bulletin #3b (WEHW40) Tsunami Advisory cancelled for state of Hawaii.
17:49	1:49 pm	2:22	WC/ATWC Bulletin #3 (WEPA41) Repeating no watch or warning in effect for Alaska, British Columbia or US West Coast